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10/790,160	03/01/2004	Subash Kalbarga	60046,0068US01	9971	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Application No. Applicant(s) 10/790 160 KALBARGA, SUBASH Office Action Summary Examiner Art Unit Muktesh G. Gupta 2444 -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS. WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b). Status 1) Responsive to communication(s) filed on 23 October 2008. 2a) ☐ This action is FINAL. 2b) This action is non-final. 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) Claim(s) 1 and 3-20 is/are pending in the application. 4a) Of the above claim(s) _____ is/are withdrawn from consideration. 5) Claim(s) _____ is/are allowed. 6) Claim(s) 1 and 3-20 is/are rejected. 7) Claim(s) _____ is/are objected to. 8) Claim(s) _____ are subject to restriction and/or election requirement. Application Papers 9) The specification is objected to by the Examiner. 10) The drawing(s) filed on is/are; a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abevance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of: Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received.

1) Notice of References Cited (PTO-892)

Paper No(s)/Mail Date 10/23/2008

Notice of Draftsperson's Patent Drawing Review (PTO-948)
 Notice of Draftsperson's Patent Drawing Review (PTO-948)
 Notice of Draftsperson's Patent Drawing Review (PTO-948)

Attachment(s)

Interview Summary (PTO-413)
 Paper No(s)/Mail Date. ______.

6) Other:

Notice of Informal Patent Application

DETAILED ACTION

1. Claims 1, 5, 9, 13, 16 and 20 are amended.

Claim 2, is cancelled.

Claims 1 and 3-20 have been examined on merits and are pending in this application.

Information Disclosure Statement

 An initialed and dated copy of the information disclosure statements (IDS) submitted on 10/23/2008 is being considered by the examiner and is attached to this office action.

Continued Examination under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/23/2008 has been entered.

Response to Amendment

 Applicant's amendment filed on 10/23/2008 necessitated a new ground(s) of rejection presented in this office action. Applicant's arguments are deemed moot in view of the following new grounds of rejection as explained here below, necessitated by Applicant's substantial amendment (i.e., "communication standard, wherein the computer management device is operative to receive video output of the host computer and transmit the video output to a remote computer and further operative to receive user input received at and transmitted from the remote computer and provide the user input to the host computer", and "in response to determining that the one or more vendor specific commands are intended for the emulated device, accessing content from a mass storage device attached to the remote computer, the content from the mass storage device attached to the remote computer redirected from the remote computer to the computer management device") to the claims which significantly affected the scope thereof.

Applicant's arguments with respect to **Claims 1 and 3-20** have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made. 5. Claims 1 and 3-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Publication No. 20030226015 to Neufeld et al., (hereinafter "Neufeld"), and further in view of U.S. Patent No. 6560641 to Powderly; Terrence W. et al., (hereinafter "Powderly") and further in view of US Patent Publication No. 20040054838 to Hoese, Geoffrey B. et al., (hereinafter "Hoese").

As to Claims 1,7-9 and 14-16, Neufeld anticipates method and system for communicating with a computer management device, computer-readable medium having computer executable instructions stored thereon, the method comprising (as stated in par. 0034, lines 2-3, par. 0035, lines 1-2, Neufeld discloses, managed server (with computer management device) connected and communicating with a remote console by a network, virtually any sort of network capable of transmitting/receiving (communicating) data between two devices):

defining, at a host computer managed by the computer management device, one or more vendor specific the vendor specific commands conforming to a first communication standard, wherein the computer management device is operative to receive video output of the host computer and transmit the video output to a remote computer and further operative to receive user input received at and transmitted from the remote computer and provide the user input to the host computer (as stated in par. 0016, lines 8-10, par. 0037, Neufeld discloses, remote management solutions combine the advantages of server management computer system hosted in the managed server with remote management tools which include the capability to capture video data and

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reset sequences (vendor specific commands) from the managed server for remote display or replay at a later time on remote console. The capture of video data is facilitated by the close integration of a remote management tool with the managed server and the ability of the remote management tool to communicate with the managed server over existing communication links such as an industry standard PCI bus. In the operation of the present technique, video data is captured, analyzed, compressed, and transmitted to the remote console 5 by circuitry and software in the managed server 2 without reliance or interference with the operating system. The remote console 5 includes software for receiving and interpreting the transmitted data to reproduce on its own monitor 8 the video data displayed on the managed server monitor 4. The transmitted video data is encoded with commands to permit the remote console 5 to interpret the data stream);

emulating a device at the management device, the emulated device conforming to a second communication standard (as stated in par. 0064, lines 1-4, par. 0062, lines 1-10, par. 0057, lines 1-4, and par. 0015, lines 6-10, Neufeld anticipates, wide range of USB devices and virtual USB peripherals could be emulated by the IOP, input output processor of the remote server management controller via the USB interface, USB host controller, RS-232 interface, USB Ethemet controllers, SCSI controllers, attached storage devices, ATB unit, address translation bus for communicating between plural types of devices. Users on remote console may connect and communicate remotely to the remote server management controller via the Ethemet interface or modem, using a remote console application running on a remote console anywhere on the network that

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includes managed server. Network management tool is able to capture the maximum amount of information from a managed server in the maximum range of operational states of the server (for example, (1) in-band online; (2) in-band offline; (3) out-of-band online; and (4) out-of-band offline and to allow control of the managed server based on that data);

Powderly also in particular teaches system, method, and adapter card for providing emulation (i.e., remote control) of a console of a host computer system from another computer system remotely located on a network, including in particular, remote control of a peripheral device, such as a data storage device, connected to the host computer system over a second communication channel as stated in col. 2, lines 36-41);

transmitting, from the host computer, the one or more vendor specific commands to the emulated device over a communications link between the host computer and the management device, the communications link conforming to the second communication standard (as stated in par. 000017, lines 1-10, Neufeld anticipates a typical remote management system, a user typically, a member of the network management team can initiate an out-of-band session with the dedicated server management computer hosted in the managed server via a remote console application program being executed on a client computer. The management computer could be addressed by the user to control various aspects of the operation of the managed server via control circuitry connected to the embedded server management computer hosted by the managed server);

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Powderly also teaches, host system with adapter card comprises a processor, a network interface controller providing a connection to the network, a peripheral device interface controller to which the peripheral device is connected, a communications client program executing on the processor, and at least one computer-readable medium having stored therein a modified BIOS extension for said peripheral device interface controller. The modified BIOS extension comprises first program code and second program code, the second program code being embedded within the first program code and defining a separate server program, as stated in col. 2, lines 42-52);

receiving the one or more vendor specific commands at the management device (as stated in par. 0064, lines 1-4 and par. 0062, lines 1-10, Neufeld anticipates, users engage in out-of-band communication with the remote server management controller for the purpose of accessing emulated devices, diagnosing, correcting and/or preventing problems with the managed server);

Powderly also teaches, upon selection by a user at the remote computer system, the modified BIOS extension is loaded into the host memory during execution of the host computer system BIOS, in place of the standard BIOS extension for the peripheral device interface controller. When executed by the host processor, the first program code of the BIOS extension (i) copies the second program code defining the server program to a new location in the host memory, and then (ii) hooks the new location of the server program to an interrupt of the host computer system to cause the host processor to initiate execution of the server program on the host computer system upon a subsequent occurrence of that interrupt, as stated in col. 2, lines 52-64);

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determining, at the management device, whether the one or more vendor specific commands are intended for the emulated device (as stated in par. 0063, lines 1-15, Neufeld anticipates, users commands interpreted by remote server management controller may establish "virtual USB peripherals" that will be seen recognized and allow communication with any USB-aware OS on managed servers);

Powderly also teaches, server program establishes communications with the communications client program on the adapter card, and, thereafter, upon receipt of requests from the communications client program, invokes functions of the host computer system BIOS to control the peripheral device as stated in col. 2, lines 64-67, col. 3, line 1);

and in response to determining that the one or more vendor specific commands are not intended for the emulated device, utilizing the received vendor specific commands for communicating with the management device (as stated in par. 0053, lines 1-15, Neufeld anticipates, remote server management controller's I/O controller monitors and controls a wide range of conditions in the managed server via the slave instrumentation module and the remote console redirection module):

Powderly also teaches, When the host system BIOS executes its power-on selftest (POST), it searches for any BIOS extension code provided on any adapter cards connected to its input/output bus. If a BIOS extension is located, the host loads the BIOS extension code into its host memory for execution (a process sometimes referred to as "shadowing"). After executing the BIOS extension code, the system BIOS

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completes its normal POST execution, which typically concludes with the booting of the host operating system, as stated in col. 4, lines 46-54).

and in response to determining that the one or more vendor specific commands are intended for the emulated device, accessing content from a mass storage device attached to the remote computer, the content from the mass storage device attached to the remote computer redirected from the remote computer to the computer management device (as stated in par. 0065, lines 1-15, Neufeld discloses, USB storage devices (such as floppy drives and CD drives) provide additional capability from a remote management point of view because the USB interface 184 allows the remote server management controller 116 to act as a host for hot-pluggable storage devices. This capability allows remote server management controller 116 to mount additional storage volumes to the managed server 2 in an OS-independent fashion. Ideally, the USB storage volumes would reside on an application such as a remote management console, giving the administrator remote CD drive and/or floppy drive functionality. Other emulated devices, such as a standard Ethernet controller, are interesting because the USB interface gives the remote management controller 116 a well-defined, hot-plug interface for communication which does not require a specific proprietary device driver. USB emulated devices are supported by the system BIOS 36 of the managed server 2 prior to when the OS is booted. If the OS of the managed server 2 is USB-aware, then it takes up support of the USB devices after boot).

Powderly also teaches, The option available to an Administrator-level user is the Disk Configuration option which supports the peripheral device control functionality of

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the present invention--in this case, control of a disk drive connected to the peripheral device interface controller 48 (e.g., disk 15a or 15b of FIG. 1). Because this option requires that the modified SCSI BIOS extension of the present invention, the user must first access HTML page 110 via the Admin option of page 104 in order to choose to have the modified SCSI BIOS extension loaded and the host computer system then reset. The Select Disk option allows the user to select a storage medium (e.g., disk unit) attached to the SCSI controller 48. As described above, selecting this option will cause the communications client RPM on the adapter card to send a request to the server program 134 on the host computer system to call the appropriate INT 13 h function to select a particular disk drive. The Partition Disk option allows the user to partition the selected disk unit, again by causing the server program 134 to call the appropriate INT 13 h function to perform that operation. The Copy Bootable Disk Image option allows the user to have a bootable disk image stored on the remote computer system to be copied to the selected disk drive. Again, this is achieved by invoking the appropriate INT 13 h functionality via the communications client RPM and the server program 134, using the communications buffer established by the server program 134 to transfer the data of the bootable disk image. This option thus allows a remote user to install a new bootable disk image to a disk drive of the host computer system, from which the host computer system can then be rebooted. This is a powerful administrative and maintenance tool, as stated in col. 18, lines 66-67, col. 19, lines 1-35).

In related field of endeavor Hoese discloses in Fig. 2, a Fiber Channel high speed serial transport 32 interconnects a plurality of workstations 36 and storage Art Unit: 2444

devices 38. A SCSI bus storage transport medium interconnects workstations 40 and storage devices 42. A storage router 44 then serves to interconnect these mediums and provide devices on either medium global, transparent access to devices on the other medium. Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes data between the target and the initiator. Storage router 44 can allow initiators and targets to be on either side. In this manner, storage router 44 enhances the functionality of Fiber Channel 32 by providing access. for example, to legacy SCSI storage devices on SCSI bus 34. In the embodiment of FIG. 2, the operation of storage router 44 can be managed by a management station 46 connected to the storage router via a direct serial connection. The FC Initiator to SCSI Target mode provides for the basic configuration of a server using Fiber Channel to communicate with SCSI targets. This mode requires that a host system have an FC attached device and associated device drivers and software to generate SCSI-3 FCP requests. This system acts as an initiator using the storage router to communicate with SCSI target devices. The SCSI devices supported can include SCSI-2 compliant direct or sequential access (disk or tape) devices. The storage router serves to translate command and status information and transfer data between SCSI-3 FCP and SCSI-2, allowing the use of standard SCSI-2 devices in a Fiber Channel environment, user configuration of the storage router will be needed to support various functional modes of operation. Configuration can be modified, for example, through a serial port or through an Ethernet port via SNMP (simple network management protocol) or a Telnet session. Specifically, SNMP manageability can be provided via an 802.3 Ethernet interface. This

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can provide for configuration changes as well as providing statistics and error information. Configuration can also be performed via TELNET or RS-232 interfaces with menu driven command interfaces. Configuration information can be stored in a segment of flash memory and can be retained across resets and power off cycles. Password protection can also be provided. Management commands are those intended to be processed by the storage router controller directly. This may include diagnostic, mode, and log commands as well as other vendor-specific commands. These commands can be received and processed by both the FCP and SCSI interfaces, but are not typically bridged to the opposite interface, as stated in par. 0018, par. 0028, par. 0035 and par. 0038.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Neufeld's remote server management controller, which is a PCI bus card connected to North bridge I/O bridge to SCSI controller to incorporate Powderly's Adapter card, also a PCI card with Peripheral Device Interface Controller. The adapter card further comprises a peripheral device interface controller to which peripheral devices can be connected and through which the host computer system can access the peripheral devices. In another embodiment, the peripheral device interface controller 48 comprises a Small Computer Systems Interface (SCSI) controller. Neufeld and Powderly both disclose SCSI controllers to which SCSI peripheral devices can be connected for remote emulation of host systems and its attached peripherals control in absence of Host operating system through first and second communication standard.

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Neufeld and Powderly disclose SCSI devices control, but do not specifically disclose Vendor Specific commands for controlling of SCSI devices. In related field on endeavor Hoese does disclose Management commands intended to be processed by the storage router controller directly which may include diagnostic, mode, and log commands as well as other vendor-specific commands. These commands can be received and processed by SCSI interfaces or SCSI controllers Adapter cards.

Neufeld, Powderly and Hoese all discloses SCSI controller and Interfaces, Hoese further discloses Vendor Specific commands for controlling the attached SCSI devices. Since all the three are in same field of controlling SCSI devices, it would have been obvious to combine these reverences.

The motivation would have been for guaranteed control and emulation of Host or Managed servers through First and Second communication standards.

Therefore, it would have been obvious to combine these references of Neufeld's, Powderly's and Hoese's disclosure in light of guaranteed communication control for various types of device with different device interfaces.

As to Claims 3, 12 and 19, Neufeld anticipates method and system of Claims 1, 9 and 16, wherein utilizing the received vendor specific commands for communicating with the management device in response to determining that the one or more vendor specific commands are not intended for the emulated device comprises utilizing data contained in the received vendor specific commands to configure the management device (as stated in par. 0053, lines 1-15, specific commands from users to remote

server management controller's are processed by an independent computer system's embedded I/O controller which includes an Input/Output processor ("IOP"), and provides general control and functions as a management processor for the remote server management controller configuration and management.

Powderly also teaches, administrative, configuration and control function choices are presented to the user as HyperText Markup Language (HTML) pages that the Web server serves to the remote client program, on implementation of program code that the processor 26 executes. The program code is preferably stored in flash memory 38. The first of these processes comprises a Web server that enables a user to interact with the adapter card 18 from the remote client program for purposes of administration, configuration and control of the adapter card 18, as stated in col. 8, lines 23-26, and lines 18-23).

Examiner uses same rational as of preceding Claims to combine the references of Neufeld's and Powderly's disclosures.

As to Claim 4, Neufeld anticipates method of Claim 3, wherein utilizing data contained in the received vendor specific commands to configure the management device comprises

setting a network address of the management device based upon contents of the received vendor specific commands (as stated in par. 0059, lines 1-10 embedded I/O controller provides a plurality of communication interfaces that can be employed to establish out-of-band communication sessions with the remote server management

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controller. Users may connect remotely to the remote server management controller via the communication interface is a UART interface module 174, which is operatively coupled to internal local bus 166. The exemplary UART interface module 174 comprises two standard 16550 UARTs, each of which may provide a separate serial communication interface. Both UARTs are mapped into the address space of the IOP 156 and can be accessed via the PCI bus 172 or by the IOP 156. Either UART may be implemented so that it can be reset through a control register in the address space of the IOP 156).

Powderly also teaches, selecting the Update Software option invokes a procedure in the config_RPM on the adapter card 18 that allows the user to transfer new software (i.e., program code) to the adapter card 18 in order to, for example, upgrade the software on the adapter card 18. The Configure Board option brings up an additional HTML page 112 that provides certain configuration options, such as, for example, the ability to set the IP address of the adapter card 18. As illustrated, that option would invoke a procedure in the config_RPM on the adapter card 18 which would store the new IP address in the appropriate location on the adapter card 18, as stated in col. 18, lines 16-27).

Examiner uses same rational as of preceding Claims to combine the references of Neufeld's and Powderly's disclosures.

As to Claims 5, 13 and 20, Neufeld anticipates method and system of Claims 1, 9 and 16, wherein utilizing the received vendor specific commands for communicating

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with the management device in response to determining that the one or more vendor specific commands are not intended for the emulated device comprises:

determining coordinates of a user input cursor on the remote computer (as stated in par. 0048, lines 1-10, In the operation of the remote management controller, the I/O processor periodically reads the video graphics data from the frame buffer to determine cursor coordinates and whether the data has changed);

and returning the coordinates to the host computer in response to the received vendor specific commands (as stated in par. 0048, lines 1-10, If the data has changed, the I/O processor will compress the video graphics data and transmit the data to the remote console via one of the communications devices, modem or NIC. The remote console will decompress and decode the data stream and display it at the remote console for viewing by the user and vice-versa.

Powderly also teaches, second process that the processor 26 runs is a VG_remoter () process. This process is responsible for determining changes in the representation of the console screen (generated by the graphics controller 22 in responses to commands from the host computer system 14) packaging information representing those changes into TCP/IP segments, and sending the TCP/IP segments to the remote client program. The VGA_remoter() process is additionally responsible for receiving keystroke and mouse movement information from the remote client, converting that information into keyboard/mouse controller queue entries, and then placing those entries into the keyboard/mouse controller 46 of the host computer system 14, as stated in col. 8, lines 26-38).

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Examiner uses same rational as of preceding Claims to combine the references of Neufeld's and Powderly's disclosures.

As to Claims 6, 10-11 and 17-18, Neufeld anticipates method and system of Claims 1, 9 and 16, wherein the first communication standard comprises the SCSI standard, the second communication standard comprises the USB standard, and wherein the emulated device comprises a USB mass storage device (as stated in par. 0065, lines 1-4 and par. 0062, lines 1-10, wide range of USB devices and virtual USB peripherals could be emulated by the input output processor of the remote server management controller via the USB interface, RS-232 interface, USB Ethernet controllers and SCSI controllers. USB storage devices floppy drives and CD drives provide additional capability from a remote management point of view because the USB interface allows the remote server management controller to act as a host for hotpluggable storage devices. This capability allows remote server management controller to mount additional storage volumes to the managed server in an OS-independent fashion).

Powderly also teaches, the server program is executing on the host processor 50, and because the host system BIOS 51 completes its normal execution, all of the callable functions of the system BIOS (invoked using the INT instruction), such as the keyboard services (INT 16 h), video services (INT 10 h), disk services (INT 13 h), serial communications services (INT 14 h), system services (INT 15 h), parallel printer services (INT 17 h), and others can be invoked by the server program 134. Thus, this

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aspect of the present invention provides a means to invoke the functionality of the host system BIOS via the communications between the communications client 140 on the adapter card 18 and the server program 134 on the host computer system 14. For example, to request the server program 134 to make a particular call to a system BIOS function, the communications client 140 can pass a pre-defined op-code for that function to the server program 134, along with any parameters required to carry out the function. The server program 134 can be coded to recognize the pre-defined op-code and to make the appropriate call to the desired system BIOS function. Any results can then be reported back to the communications client 140., as stated in col. 11, lines 3-24).

Powderly also teaches, In the preferred embodiment, the peripheral device interface controller 48 comprises a Small Computer Systems Interface (SCSI) controller implemented, as stated in col. 10, lines 3-5).

Examiner uses same rational as of preceding Claims to combine the references of Neufeld's and Powderly's disclosures.

Remarks

- The following pertaining arts are discovered and not used in this office action.Office reserves the right to use these arts in later actions.
 - a. Desoli; Giuseppe (US 6907519 B2) Systems and methods for integrating emulated and native code

- Dimitroff; John E. et al. (US 6536000 B1) Supporting a SCSI device on a non-SCSI transport medium of a network
- c. Kern, Eric R. et al. (US 20050021654 A1) Simultaneous sharing of storage drives on blade center
- d. Mondal; Umasankar (US 6825846 B2) Systems and methods for capturing screen displays from a host computing system for display at a remote terminal
- e. Rowlands; Mohan Babu (US 6636982 B1) Apparatus and method for detecting the reset of a node in a cluster computer system
- f. Slutz; Mark A. et al. (US 6601119 B1) Method and apparatus for varying target behavior in a SCSI environment
- g. Warwick, Alan et al. (US 20050044244 A1) Providing SCSI device access over a network

Conclusion

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Muktesh G. Gupta whose telephone number is 571-2705011. The examiner can normally be reached on Monday-Friday, 8:00 a.m. -5:00 p.m.,
EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William C. Vaughn can be reached on 571-272-3922. The fax phone

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number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MG

/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2444